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MEMORANDUM FOR: Maurice Ernst  
NIO/Economics  
7E-48 HQS

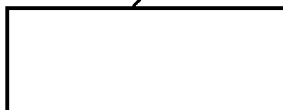
*Maurice*

Per your request, the attached is a list of a few examples of Soviet legal acquisitions of Western technology and equipment that the Soviets have used for military purposes.

I hope the attached satisfies your needs. If not, please contact [redacted]

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EXO/SOVA

Date 3 September 1982

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Examples of Legal Soviet Acquisitions of Western Technology  
and Equipment for Military Purposes

The Soviet Union legally purchases dual-use Western commercial products for military use. For example, many performance characteristics of commercial products such as communications and signal processing equipment differ little from similar military products. The Soviets commonly acquire this hardware under COCOM license ostensibly for commercial purposes, but in fact they often use it in military systems or in military-related roles. This practice, for example, has substantially benefited Soviet anti-submarine warfare capabilities. Advanced acoustic signal analyzers legally purchased from Denmark in the middle 1970s are now operational in Soviet attack submarines that track US naval units. Wide-band, high-capacity, long-distance, underwater communications cable purchased from Japan under COCOM license in 1979, is now used in a military-related role. [REDACTED]

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Because domestic models of machine tools often lack the required precision or flexibility, Soviet defense plants rely extensively on Western machine tools for metal cutting and metal forming operations. Legal Soviet purchases of Western machine tools during the past decade have amounted to over \$4 billion, about one quarter of which was spent for NC machine tools. Western machine tools find a range of applications for diverse military products. Soviet plants making military trucks, wheeled armored vehicles, and components for missile transporters employ legally purchased US gear-cutting machines. During the late 1960s and early 1970s, the Soviets purchased US grinding machines for production of small, high precision bearings suitable for ballistic missile guidance components. Since the late 1960s, a single

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Austrian firm has sold the USSR some 26 hot and cold rotary forges designed to produce artillery tubes and small arms barrels.

The USSR relies on dual-use manufacturing technology legally obtained from the West to produce its increasingly sophisticated weapons. As a result, Soviet defense plants introduce relatively advanced manufacturing approaches many years before they can develop indigenous capabilities. Western production and quality control equipment and manufacturing processes increase efficiency and productivity.

Legal purchases of Western metallurgical manufacturing technologies have substantially added to the quality of Soviet weapons. In the late 1970s, Dresser Industries built a turnkey plant in Kuybyshev, USSR, to produce rock-drill bits which included extensive tungsten-based powder metallurgy technology. The equipment and expertise provided have enabled the Soviets to make the initial tungsten powders needed for production of new and more lethal tungsten-alloy penetrators for their kinetic-energy, anti-tank projectiles. Sweden, Japan, and West Germany have made legal sales of related powder metallurgy pressing technology similar to that which Western manufacturers use to make tungsten-alloy penetrators. The Soviets also use large amounts of legally purchased processes and equipment to make much of the specialty steel they use in their military products. The French firm, Creusot-Loire, is helping to build a massive steel plant in Novolipetsk, which will produce some 7 million tons of specialty steel when operating at full capacity in 1986. Much of the plant's output will be electro-slag and vacuum-arc remelt steels like those used in submarine hulls, artillery tubes, and tank armor. (S NF)

The Soviets also purchase large amounts of Western welding and

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fabrication technology for defense production. In the middle 1970s, the Soviets legally acquired US blind riveting technology and French aerospace welding technology. The equipment purchased is now used by Gorkiy Airframe Plant 21 to produce advanced Soviet interceptor aircraft. Tungsten arc welders legally obtained are used to fabricate armor plate to make Soviet tanks. [REDACTED]

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